

With regards to the Boeing 767/PW4000 negative-G flight tests, the Egyptians have requested how long into the negative G condition did it take before an engine low oil pressure warning occurred? And though they did not ask this question, how long after the application of positive Gs did the engine low oil pressure warning stop?

### Summary of 767/PW4000 Negative 'g' Certification Testing

Testing was conducted 20 August 1987 on VL011 to demonstrate that no hazardous malfunctions of the engines or associated systems occur during negative 'g' flight. There were a total of four conditions performed. In all four conditions the engines were at a high engine thrust setting. Additionally, in all four conditions the engine oil pressure began to decrease almost immediately following zero to negative operation. The conditions were all performed between 10,000 feet and 15,000 feet and airspeeds of between 275 knots and 350 knots. Provided below is a table with the pertinent information from the testing:

<u>Cond</u>	<u>Total time at 0 to neg 'g'</u>	<u>Max neg 'g' obtained</u>	<u>Avg neg 'g' during cond</u>	<u>Minimum oil press Left/Right</u>	<u>Time when oil press fell below 70psi</u>	<u>Total time oil press &lt;70 psi</u>
1	8 sec	-0.75 g	-0.50 g	75/65 psi	*1.5 sec after +'g' (R eng)	1.5 sec (R eng)
2	7 sec	-0.80 g	-0.60 g	69/80 psi	*1.5 sec after +'g' (L eng)	2.0 sec (L eng)
3	0.8 sec	0 g	0 g	95/67 psi	*1.5 sec after +'g' (R eng)	1.5 sec (R eng)
4	7.5 sec	-0.05 g	+0.05 g	78/72 psi	Never fell below 70 psi	Never below 70

\* 1.5 seconds after positive 'g' was obtained following the negative 'g' condition.